

REMARKS

Claims 1-33 are pending. Claims 1-33 are canceled, without prejudice, herein. In order to better clarify Applicant's invention, Applicant is presenting new claims 34 through 44 herein.

Claim 34 recites a plasma treatment apparatus, comprising a top formed to include a gap, a bottom, and one or more walls interconnecting said top and said bottom, wherein said top comprises a first cathode and a second cathode, and wherein said first cathode and said second cathode are separated by said gap. Support can be found in the Specification at Page 6 / Line 5 through 12; Figs. 1, 5, 9; and in original claim 1.

Claim 34 further recites one or more magnets, wherein said one or more walls comprise said one or more magnets, wherein said one or more magnets can generate a magnetic field comprising a first portion and a second portion, wherein said first portion is disposed between said top and said bottom, and wherein said second portion extends outwardly from said top. Support can be found in the Specification at Page 6 / Lines 5 – 22; FIGs. 1, 5, 9, 11, 13, and 14.

Claim 35 recites the apparatus of claim 34 further comprising a substrate disposed adjacent said top such that said second portion of said magnetic field portion is disposed between said top and said substrate. Support can be found in FIGs. 1, 5, 9, 11, and 14.

Claim 36 recites the apparatus of claim 34 further comprising a power supply interconnected with said first cathode and said second cathode, and an anode interconnected with said power supply, wherein said bottom comprises said anode. Support can be found in the Specification at Page 6 / Lines 10-17; FIGs. 1, 5, and 9.

Claim 37 recites the apparatus of claim 36, wherein said top, bottom, and one or more

walls define a process chamber, and wherein said bottom is formed to include a process gas inlet such that process gas from an external source can be introduced into said process chamber.

Support can be found in the Specification at Page 10 / Lines 7-11; and in FIG. 5.

Claim 38 recites the apparatus of claim 34 wherein at least one of the cathodes comprises a non-planar cathode surface. Support can be found in original claim 6.

Claim 39 recites the apparatus of claim 38 wherein at least one of the cathodes comprises a facing cathode surface having a shape selected from the group consisting of: a point, a bevel, a rounded surface, a stepped surface, a ridged surface, and combinations thereof. Support can be found in original claim 7.

Claim 40 recites the apparatus of claim 34 wherein the cathodes comprise ends and a central portion, and wherein the cathodes are shaped such that the gap is wider at the ends than at the central portion. Support can be found in original claim 11.

Claim 41 recites the apparatus of claim 40, wherein the ends of the cathodes are beveled. Support can be found in original claim 12.

Claim 42 recites the apparatus of claim 34, wherein the magnetic field comprises a maximum strength magnetic field line, wherein the maximum strength magnetic field line has a maximum magnetic field strength B_1 adjacent one of the cathodes and a minimum magnetic field strength B_2 at a central portion of the gap, and wherein B_1/B_2 is greater than 2. Support can be found in original claim 13.

Claim 43 recites the apparatus of claim 42 wherein B_1/B_2 is greater than 4. Support can be found in original claim 14.

Claim 44 recites a plasma treatment apparatus comprising a top formed to include a

gap, a bottom, and one or more walls interconnecting said top and said bottom, wherein said top comprises a first cathode and a second cathode, and wherein said first cathode and said second cathode are separated by said gap. Support can be found in the Specification at Page 6 / Line 5 through 12; Figs. 1, 5, 9; and in original claim 1.

Claim 44 further recites one or more magnets, wherein said one or more bottom comprises said one or more magnets, wherein said one or more magnets can generate a magnetic field comprising a first portion and a second portion, wherein said first portion is disposed between said top and said bottom, and wherein said second portion extends outwardly from said top. Support can be found in FIG. 13 and in FIG. 17.

No new matter has been entered. Reexamination and reconsideration of the application is respectfully requested.

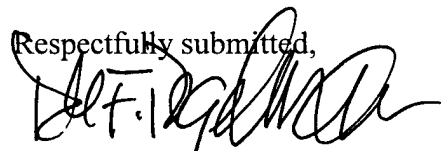
Flemming teaches an apparatus comprising process chamber defined by a top, a bottom, and a circular wall interconnecting the top and bottom. *See*, Flemming FIG. 1. Flemming's process chamber further comprises a first cathode, namely extraction cathode 13, which comprises the top. *See*, Flemming FIG. 1. Flemming further teaches use of a second cathode, namely base cathode 12, which comprises the bottom of Flemming's process chamber. *See*, Flemming FIG. 1. Flemming expressly teaches that "cathodes 12 and 13 are essentially disc-shaped." Col. 2 / Lines 56-57.

Applicant's new independent claims 34 and 44 recite, *inter alia*, a plasma treatment apparatus comprising a top formed to include a gap, a bottom, and one or more walls interconnecting said top and said bottom, wherein said top comprises a first cathode and a second cathode, and wherein said first cathode and said second cathode are separated by said

gap. Flemming nowhere teaches or suggests a plasma treatment apparatus having a top, a bottom, and one or more walls, where the top comprises two different cathodes separated by a gap, as recited in Applicant's claims 34 and 44. Applicant respectfully submits that Flemming neither anticipates, nor renders obvious, Applicant's new claims 34 and 44.

New claims 35 through 43 depend, directly or indirectly, from claim 34. Therefore, claims 35 through 43 include all the elements of claim 35. "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." MPEP 2143.03; *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed.Cir. 1988). For the reasons set forth above, Applicant respectfully submits that Flemming does not anticipate nor render obvious claim 34. This being the case, Applicant further respectfully submits that claims 35 through 43 patentable over Flemming.

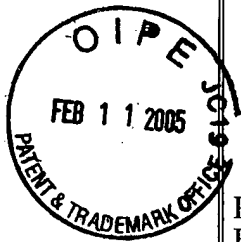
Having dealt with all of the outstanding objections and/or rejections of the claims, Applicant submits that the application as amended is in condition for allowance, and an allowance at an early date is respectfully solicited. In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account No. 502262.

Respectfully submitted,


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I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on February 8, 2005, at Tucson, Arizona.

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